2013
Air Quality Division

ANNUAL AIR EMISSIONS INVENTORY QUESTIONNAIRE

Crushing & Screening Plant

The 2013 Crushing & Screening Plant Annual Emissions Inventory Questionnaire includes 4 forms that are required to be completed and submitted to the Air Quality Division. Instructions for all forms are included below. Upon completion, submit the forms along with the signature by the Responsible Official of the facility within 90 days of receipt of a letter from the Department to the address below.

FORM 1: Facility General Information

Complete all information as requested.

FORM 2: Equipment, Stack & Location Data

Equipment Information: List all the on-site equipment along with the Authorization To Operate (ATO) number where available. Indicate, if not available.
Stack Information: Provide details of each stack.
Operating Location: If the portable equiment was moved from one location to another,list the dates, the cities & counties, the latitude & longitude or address/driving directions for the portable equipment that was operated during the year 2013.

Once data is inputted, the formulas are set to complete the calculations. Therefore, do not move or change any of the fields or columns. If moved it will result incorrect calculations.

FORM 3A & 3B: Emissions Data - Point & Fugitive Emissions

Enter the quanitity, amount processed (tons/hr) and the total hours operated for each of the different processes.

FORM 3C: Emissions Data - Generator Emissions

Based on the type of the fuel used, (Gasoline, Diesel, or Natural Gas/Liquid Propane), choose the appropriate table to input the generator horsepower and hours of operation during the calendar year 2013. If you used commercial electricity to power your equipment covered under your permit, please check the box at the bottom of the page 7.

FORM 4: Summary & Certification

A summarization of all the emissions by each pollutant will be listed within this form. All reports submitted to the Department should be certified true and accurate by the Responsible Official of the facility. This person is the owner or operator of the facility. **If there is a change of the Responsible Official of the facility, please notify the Department with an additional letter stating the change.**

If you have any question or have difficulty completing this form, please contact Michael Burton at burton.michael@azdeq.gov or (602) 771-4562. Remember to make photocopies of the completed questionnaire prior to mailing for your records/reference. Please mail the emission inventory questionnaire form to the following address:

Arizona Department of Environmental Quality
Attention: Michael Burton
Air Quality Division, SIP Section
1110 West Washington Street
Phoenix, AZ 85007

CTS #

FORM 1: FACILITY GENERAL INFORMATION YEAR 2013

SECTION I: ***Plant Identification & Mailing Information***

Company Name: _____

Place Name: _____ Place ID # : _____

Mailing Address: _____ City: _____ State: _____

County: _____ Zip Code: _____

Phone: _____ Fax: _____

Permit # or LTF #: _____ General Permit: Yes ☐ No ☐

SECTION II: ***Emissions Inventory Contact***

Name: _____ Title: _____

Phone: _____ Fax: _____

E-mail Address: _____

SECTION III: ***Confidential Request***

Pursuant to Arizona Revised Statues §49-432 and §49-201, do you claim the Emissions Inventory data submittal confidential. Yes ☐ No ☐

If yes include which portions of the inventory are confidential along with a brief explanation:

_____

_____

_____

_____

_____

FORM 2: EQUIPMENT, STACK, & LOCATION DATA YEAR 2013

Equipment Information

Equipment Type	Equipment ID	ATO #	Max. Rated Capacity	Amount Processed	Hours Operated

Stack Information

	Stack #1	Stack #2	Stack #3
Process Type/Description			
Height (feet)			
Diameter (feet)			
Velocity (feet/second)			
Exhaust Gas Temperature (F)			
Flow Rate (actual cubic feet per minute)			

Operating Location

Date		City & County of Operation	Latitude	Longitude	Address or Driving Directions
From	To				

FORM 3A: EMISSIONS DATA - POINT YEAR 2013

Source	Pollutant	Number of Units	Amount Processed tons/hour	Hours Operated hours/year	Emission Factor pounds/ton/unit	Emissions tons/year
Batch Drop Operations	PM10				0.00048	
	PM2.5				0.00016	
	PM				0.00067	
Loading feed hopper	PM10				0.00048	
	PM2.5				0.00016	
	PM				0.00067	
Pneumatic loading of lime silo	PM10				0.0049	
	PM2.5				0.0049	
	PM				0.0089	
Lime transfer onto conveyor belts	PM10				0.000046	
	PM2.5				0.000013	
	PM				0.00014	
Primary Crushing - 7.5 to 30cm (3 to 12 inches)	PM10				0.00054	
	PM2.5				0.0001	
	PM				0.0012	
Secondary Crushing - 2.5 to 10cm (1 to 4 inches)	PM10				0.00054	
	PM2.5				0.0001	
	PM				0.0012	
Tertiary Crushing - 0.5 to 2.5 cm (3/16 to 1 inch)	PM10				0.00054	
	PM2.5				0.0001	
	PM				0.0012	
Fine Crushing - 0.5 cm and smaller (3/16 inch and smaller)	PM10				0.0012	
	PM2.5				0.00007	
	PM				0.003	
Screening	PM10				0.00074	
	PM2.5				0.00005	
	PM				0.0022	
Fine Screening - 0.5 cm and smaller (3/16 inch and smaller)	PM10				0.0022	
	PM2.5				0.0022	
	PM				0.0036	
Stackers	PM10				0.00048	
	PM2.5				0.00016	
	PM				0.00067	
Conveyor transfer points	PM10				0.000046	
	PM2.5				0.000013	
	PM				0.00014	

FORM 3B: EMISSIONS DATA - POINT & FUGITIVES YEAR 2013

Conversion Number - 1 foot = 0.0001894 mile

Source	Pollutants	Vehicle Miles Traveled miles/year	Emission Factor pounds/VMT	Emissions tons/year
	PM10		0.1671	
	PM2.5		0.0256	
Fugitive Emissions - Haul Roads	PM		0.6555	

Source	Pollutants	No. of Piles	Hours Stored hrs/year	Emission Factor pounds/hour/piles	Emissions tons/year
	PM10			0.00004828	
	PM2.5			0.0000142	
Fugitive Emissions - Storage Piles	PM			0.00004828	

Source	Pollutant	Amount Processed tons/year	Emission Factor pounds/ton/unit	Emissions tons/year
Truck Unloading - Fragmented Stone	PM10		0.000016	
Truck Unloading - Conveyor, Crushed Stone	PM10		0.0001	
Wet Drilling - Unfragmented Stone	PM10		0.00008	

FORM 3C: EMISSIONS CALCULATIONS - GENERATORS YEAR 2013

	FUEL - DIESEL - LESS THAN OR EQUAL TO 600 HP				***FUEL - DIESEL - GREATER THAN 600 HP***			
	Generator #1		**Generator #2**		**Generator #1**		**Generator #2**	
	Max. Capacity (HP)	Operational Hours	Max. Capacity (HP)	Operational Hours (hours/year)	Max. Capacity (HP)	Operational Hours	Max. Capacity (HP)	Operational Hours (hours/year)
Pollutants	Emission Factor pounds/hp-hour	Emissions tons/year	Emission Factor pounds/hp-hour	Emissions tons/year	Emission Factor pounds/hp-hour	Emissions tons/year	Emission Factor pounds/hp-hour	Emissions tons/year
PM10	0.0022		0.0022		0.0006		0.0006	
PM	0.0022		0.0022		0.0007		0.0007	
CO	0.0067		0.0067		0.0055		0.0055	
VOC	0.0025		0.0025		0.0007		0.0007	
SOx	0.0021		0.0021		0.0073		0.0073	
Nox	0.0310		0.0310		0.0240		0.0240	
Acenaphthene	9.94E-09		9.94E-09		3.28E-08		3.28E-08	
Acenaphthylene	3.54E-08		3.54E-08		6.46E-08		6.46E-08	
Acetaldehyde	5.37E-06		5.37E-06		1.76E-07		1.76E-07	
Acrolein	6.48E-07		6.48E-07		5.52E-08		5.52E-08	
Anthracene	1.31E-08		1.31E-08		8.61E-09		8.61E-09	
Benzene	6.53E-06		6.53E-06		5.43E-06		5.43E-06	
Benzo(a)anthracene	1.18E-08		1.18E-08		4.35E-09		4.35E-09	
Benzo(a)pyrene	1.32E-09		1.32E-09		1.80E-09		1.80E-09	
Benzo(b)fluoranthene	6.94E-10		6.94E-10		7.77E-09		7.77E-09	
Benzo(g,h,l)perylene	3.42E-09		3.42E-09		3.89E-09		3.89E-09	
Benzo(k)fluoranthene	1.09E-09		1.09E-09		1.53E-09		1.53E-09	
1,3-Butadiene	2.74E-07		2.74E-07		-		-	
Chrysene	2.47E-09		2.47E-09		1.07E-08		1.07E-08	
Dibenz(a,h)anthracene	4.08E-09		4.08E-09		2.42E-09		2.42E-09	
Fluoranthene	5.33E-08		5.33E-08		2.82E-08		2.82E-08	
Fluorene	2.04E-07		2.04E-07		8.96E-08		8.96E-08	
Formaldehyde	8.26E-06		8.26E-06		5.52E-07		5.52E-07	
Indeno(1,2,3-cd)pyrene	2.63E-09		2.63E-09		2.90E-09		2.90E-09	
Naphthalene	5.94E-07		5.94E-07		9.10E-07		9.10E-07	
Phenanthrene	2.06E-07		2.06E-07		2.86E-07		2.86E-07	
Propylene	1.81E-05		1.81E-05		1.95E-05		1.95E-05	
Pyrene	3.35E-08		3.35E-08		2.60E-08		2.60E-08	
Toluene	2.86E-06		2.86E-06		1.97E-06		1.97E-06	
Xylene	2.00E-06		2.00E-06		1.35E-06		1.35E-06	

☐ Check Box, if you used commercial electricity to power your permitted equipment.

FORM 3C: EMISSIONS CALCULATIONS - GENERATOR YEAR 2013

	FUEL - GASOLINE				***FUEL - NATURAL GAS OR LIQUIFIED PETROLEUM GAS***			
	Generator #1		**Generator #2**		**Generator #1**		**Generator #2**	
	Max. Capacity (HP)	Hours (hours/year)	Max. Capacity (HP)	Operational Hours (hours/year)	Max. Capacity (HP)	Hours (hours/year)	Max. Capacity (HP)	Operational Hours (hours/year)
Pollutants	Emission Factor pounds/hp-hour	Emissions tons/year	Emission Factor pounds/hp-hour	Emissions tons/year	Emission Factor pounds/hp-hour	Emissions tons/year	Emission Factor pounds/hp-hour	Emissions tons/year
PM10	0.0007		0.0007		0.0001		0.0001	
PM	0.0007		0.0007		0.0001		0.0001	
CO	0.4390		0.4390		0.0029		0.0029	
VOC	0.0220		0.0220		0.0008		0.0008	
SOx	0.0006		0.0006		4.35E-06		4.35E-06	
NOx	0.0110		0.0110		0.0206		0.0206	
1,3-Butadiene	-	-	-	-	1.69E-06		1.69E-06	
Acetaldehyde	-	-	-	-	7.10E-06		7.10E-06	
Acrolein	-	-	-	-	6.70E-06		6.70E-06	
Benzene	-	-	-	-	4.02E-06		4.02E-06	
Butyr/isobutyraldehyde	-	-	-	-	1.24E-07		1.24E-07	
Carbon Tetrachloride	-	-	-	-	4.51E-08		4.51E-08	
Chlorobenzene	-	-	-	-	3.28E-08		3.28E-08	
Chloroform	-	-	-	-	3.49E-08		3.49E-08	
1,1-Dichloroethane	-	-	-	-	2.88E-08		2.88E-08	
1,2-Dichloroethane	-	-	-	-	2.88E-08		2.88E-08	
1,2-Dichloropropane	-	-	-	-	3.31E-09		3.31E-09	
1,3-Dichloropropene	-	-	-	-	3.23E-08		3.23E-08	
Ethane	-	-	-	-	1.79E-04		1.79E-04	
Ethylbenzene	-	-	-	-	6.31E-08		6.31E-08	
Ethylene Dibromide	-	-	-	-	5.42E-08		5.42E-08	
Formaldehyde	-	-	-	-	5.22E-05		5.22E-05	
Methane	-	-	-	-	5.86E-04		5.86E-04	
Methanol	-	-	-	-	7.79E-06		7.79E-06	
Methylene Chloride	-	-	-	-	1.05E-07		1.05E-07	
Naphthalene	-	-	-	-	2.47E-07		2.47E-07	
Styrene	-	-	-	-	3.03E-08		3.03E-08	
Tetrachloroethane	-	-	-	-	6.44E-08		6.44E-08	
1,1,2-Trichloroethane	-	-	-	-	3.90E-08		3.90E-08	
Toluene	-	-	-	-	1.42E-06		1.42E-06	
Vinyl Chloride	-	-	-	-	1.83E-08		1.83E-08	
Xylene	-	-	-	-	4.96E-07		4.96E-07	

FORM 4: SUMMARY & CERTIFICATION YEAR 2013

All the emissions for each pollutant are totalled and entered in the table below.

Pollutant	Tonnage (tons per year)
Particulate Matter (PM)	
Particulate Matter less than 2.5 microns (PM2.5)	
Particulate Matter less than 10 microns (PM10)	
Nitrogen Oxides (NOx)	
Sulfur Oxides (SOx)	
Volate Organic Compounds (VOC)	
Carbon Monoxide (CO)	
Hazard Air Pollutants (HAPs)	

Certification of Truth & Accuracy
I certify that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
All information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record.

Signature of Responsible Official: _____ Date: _____

Print Name: _____

Title: _____